

SEQUENCE LISTING

<110> INCYTE PHARMACEUTICALS, INC.

LAL, Preeti

YUE, Henry

TANG, Y. Tom

HILLMAN, Jennifer L.

BAUGHN, Mariah R.

YANG, Junming

<120> CARBOHYDRATE-MODIFYING ENZYMES

<130> PF-0687 PCT

<140> To Be Assigned

<141> Herewith

<150> 60/130,383

<151> 1999-04-21

<160> 10

<170> PERL Program

<210> 1

<211> 434

<212> PRT

<213> Homo sapiens

<220>

<221> misc_feature

<223> Incyte ID No: 000422CD1

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				20					25					30
Ser	Arg	Gly	Gly	Gln	Gly	Arg	Gly	Val	Glu	Lys	Pro	Pro	His	Leu
				35					40					45
Ala	Ala	Leu	Ile	Leu	Ala	Arg	Gly	Gly	Ser	Lys	Gly	Ile	Pro	Leu
				50					55					60
Lys	Asn	Ile	Lys	His	Leu	Ala	Gly	Val	Pro	Leu	Ile	Gly	Trp	Val
				65					70					75
Leu	Arg	Ala	Ala	Leu	Asp	Ser	Gly	Ala	Phe	Gln	Ser	Val	Trp	Val
				80					85					90
Ser	Thr	Asp	His	Asp	Glu	Ile	Glu	Asn	Val	Ala	Lys	Gln	Phe	Gly
				95					100					105
Ala	Gln	Val	His	Arg	Arg	Ser	Ser	Glu	Val	Ser	Lys	Asp	Ser	Ser
				110					115					120
Thr	Ser	Leu	Asp	Ala	Ile	Ile	Glu	Phe	Leu	Asn	Tyr	His	Asn	Glu
				125					130					135
Val	Asp	Ile	Val	Gly	Asn	Ile	Gln	Ala	Thr	Ser	Pro	Cys	Leu	His
				140					145					150
Pro	Thr	Asp	Leu	Gln	Lys	Val	Ala	Glu	Met	Ile	Arg	Glu	Glu	Gly

	155		160		165
Tyr Asp Ser Val Phe Ser Val Val Arg Arg His Gln Phe Arg Trp					
	170		175		180
Ser Glu Ile Gln Lys Gly Val Arg Glu Val Thr Glu Pro Leu Asn					
	185		190		195
Leu Asn Pro Ala Lys Arg Pro Arg Arg Gln Asp Trp Asp Gly Glu					
	200		205		210
Leu Tyr Glu Asn Gly Ser Phe Tyr Phe Ala Lys Arg His Leu Ile					
	215		220		225
Glu Met Gly Tyr Leu Gln Gly Gly Lys Met Ala Tyr Tyr Glu Met					
	230		235		240
Arg Ala Glu His Ser Val Asp Ile Asp Val Asp Ile Asp Trp Pro					
	245		250		255
Ile Ala Glu Gln Arg Val Leu Arg Tyr Gly Tyr Phe Gly Lys Glu					
	260		265		270
Lys Leu Lys Glu Ile Lys Leu Leu Val Cys Asn Ile Asp Gly Cys					
	275		280		285
Leu Thr Asn Gly His Ile Tyr Val Ser Gly Asp Gln Lys Glu Ile					
	290		295		300
Ile Ser Tyr Asp Val Lys Asp Ala Ile Gly Ile Ser Leu Leu Lys					
	305		310		315
Lys Ser Gly Ile Glu Val Arg Leu Ile Ser Glu Arg Ala Cys Ser					
	320		325		330
Lys Gln Thr Leu Ser Ser Leu Lys Leu Asp Cys Lys Met Glu Val					
	335		340		345
Ser Val Ser Asp Lys Leu Ala Val Val Asp Glu Trp Arg Lys Glu					
	350		355		360
Met Gly Leu Cys Trp Lys Glu Val Ala Tyr Leu Gly Asn Glu Val					
	365		370		375
Ser Asp Glu Glu Cys Leu Lys Arg Val Gly Leu Ser Gly Ala Pro					
	380		385		390
Ala Asp Ala Cys Ser Thr Ala Gln Lys Ala Val Gly Tyr Ile Cys					
	395		400		405
Lys Cys Asn Gly Gly Arg Gly Ala Ile Arg Glu Phe Ala Glu His					
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Ile Cys Leu Leu Met Glu Lys Val Asn Asn Ser Cys Gln Lys					
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<212> PRT

<213> Homo sapiens

<220>

<221> misc_feature

<223> Incyte ID No: 983984CD1

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Pro Leu Cys Leu Ala Thr Cys Leu Asp His His Phe Pro Thr Gly			
	35	40	45
Ser Arg Pro Thr Val Pro Gly Pro Leu His Phe Ser Gly Tyr Ser			

	50		55		60
Ser Val Pro Asp Gly Lys Pro Leu Val Arg Glu Pro Cys Arg Ser					
	65		70		75
Cys Ala Val Val Ser Ser Ser Gly Gln Met Leu Gly Ser Gly Leu					
	80		85		90
Gly Ala Glu Ile Asp Ser Ala Glu Cys Val Phe Arg Met Asn Gln					
	95		100		105
Ala Pro Thr Val Gly Phe Glu Ala Asp Val Gly Gln Arg Ser Thr					
	110		115		120
Leu Arg Val Val Ser His Thr Ser Val Pro Leu Leu Leu Arg Asn					
	125		130		135
Tyr Ser His Tyr Phe Gln Lys Ala Arg Asp Thr Leu Tyr Met Val					
	140		145		150
Trp Gly Gln Gly Arg His Met Asp Arg Val Leu Gly Gly Arg Thr					
	155		160		165
Tyr Arg Thr Leu Leu Gln Leu Thr Arg Met Tyr Pro Gly Leu Gln					
	170		175		180
Val Tyr Thr Phe Thr Glu Arg Met Met Ala Tyr Cys Asp Gln Ile					
	185		190		195
Phe Gln Asp Glu Thr Gly Lys Asn Arg Arg Gln Ser Gly Ser Phe					
	200		205		210
Leu Ser Thr Gly Trp Phe Thr Met Ile Leu Ala Leu Glu Leu Cys					
	215		220		225
Glu Glu Ile Val Val Tyr Gly Met Val Ser Asp Ser Tyr Cys Arg					
	230		235		240
Glu Lys Ser His Pro Ser Val Pro Tyr His Tyr Phe Glu Lys Gly					
	245		250		255
Arg Leu Asp Glu Cys Gln Met Tyr Leu Ala His Glu Gln Ala Pro					
	260		265		270
Arg Ser Ala His Arg Phe Ile Thr Glu Lys Ala Val Phe Ser Arg					
	275		280		285
Trp Ala Lys Lys Arg Pro Ile Val Phe Ala His Pro Ser Trp Arg					
	290		295		300

Thr Glu

<210> 3

<211> 578

<212> PRT

<213> Homo sapiens

<220>

<221> misc_feature

<223> Incyte ID No: 2210054CD1

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Leu Pro Gln His His Gly Ala Pro Gly Pro Asp Gly Ser Ala Pro					
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Asp Pro Ala His Tyr Arg Glu Arg Val Lys Ala Met Phe Tyr His					
	35		40		45
Ala Tyr Asp Ser Tyr Leu Glu Asn Ala Phe Pro Phe Asp Glu Leu					
	50		55		60
Arg Pro Leu Thr Cys Asp Gly His Asp Thr Trp Gly Ser Phe Ser					
	65		70		75

Leu Thr Leu Ile Asp Ala Leu Asp Thr	Leu Leu Ile Leu Gly Asn	80	85	90
Val Ser Glu Phe Gln Arg Val Val Glu	Val Leu Gln Asp Ser Val	95	100	105
Asp Phe Asp Ile Asp Val Asn Ala Ser	Val Phe Glu Thr Asn Ile	110	115	120
Arg Val Val Gly Gly Leu Leu Ser Ala	His Leu Leu Ser Lys Lys	125	130	135
Ala Gly Val Glu Val Glu Ala Gly Trp	Pro Cys Ser Gly Pro Leu	140	145	150
Leu Arg Met Ala Glu Glu Ala Ala Arg	Lys Leu Leu Pro Ala Phe	155	160	165
Gln Thr Pro Thr Gly Met Pro Tyr Gly	Thr Val Asn Leu Leu His	170	175	180
Gly Val Asn Pro Gly Glu Thr Pro Val	Thr Cys Thr Ala Gly Ile	185	190	195
Gly Thr Phe Ile Val Glu Phe Ala Thr	Leu Ser Ser Leu Thr Gly	200	205	210
Asp Pro Val Phe Glu Asp Val Ala Arg	Val Ala Leu Met Arg Leu	215	220	225
Trp Glu Ser Arg Ser Asp Ile Gly Leu	Val Gly Asn His Ile Asp	230	235	240
Val Leu Thr Gly Lys Trp Val Ala Gln	Asp Ala Gly Ile Gly Ala	245	250	255
Gly Val Asp Ser Tyr Phe Glu Tyr Leu	Val Lys Gly Ala Ile Leu	260	265	270
Leu Gln Asp Lys Lys Leu Met Ala Met	Phe Leu Glu Tyr Asn Lys	275	280	285
Ala Ile Arg Asn Tyr Thr Arg Phe Asp	Asp Trp Tyr Leu Trp Val	290	295	300
Gln Met Tyr Lys Gly Thr Val Ser Met	Pro Val Phe Gln Ser Leu	305	310	315
Glu Ala Tyr Trp Pro Gly Leu Gln Ser	Leu Ile Gly Asp Ile Asp	320	325	330
Asn Ala Met Arg Thr Phe Leu Asn Tyr	Tyr Thr Val Trp Lys Gln	335	340	345
Phe Gly Gly Leu Pro Glu Phe Tyr Asn	Ile Pro Gln Gly Tyr Thr	350	355	360
Val Glu Lys Arg Glu Gly Tyr Pro Leu	Arg Pro Glu Leu Ile Glu	365	370	375
Ser Ala Met Tyr Leu Tyr Arg Ala Thr	Gly Asp Pro Thr Leu Leu	380	385	390
Glu Leu Gly Arg Asp Ala Val Glu Ser	Ile Glu Lys Ile Ser Lys	395	400	405
Val Glu Cys Gly Phe Ala Thr Ile Lys	Asp Leu Arg Asp His Lys	410	415	420
Leu Asp Asn Arg Met Glu Ser Phe Phe	Leu Ala Glu Thr Val Lys	425	430	435
Tyr Leu Tyr Leu Leu Phe Asp Pro Thr	Asn Phe Ile His Asn Asn	440	445	450
Gly Ser Thr Phe Asp Thr Val Ile Thr	Pro Tyr Gly Glu Cys Ile	455	460	465
Leu Gly Ala Gly Gly Tyr Ile Phe Asn	Thr Glu Ala His Pro Ile	470	475	480
Asp Pro Ala Ala Leu His Cys Cys Gln	Arg Leu Lys Glu Glu Gln	485	490	495

Trp	Glu	Val	Glu	Asp	Leu	Met	Arg	Glu	Phe	Tyr	Ser	Leu	Lys	Arg	
				500					505					510	
Ser	Arg	Ser	Lys	Phe	Gln	Lys	Asn	Thr	Val	Ser	Ser	Gly	Pro	Trp	
				515					520					525	
Glu	Pro	Pro	Ala	Arg	Pro	Gly	Thr	Leu	Phe	Ser	Pro	Glu	Asn	His	
				530					535					540	
Asp	Gln	Ala	Arg	Glu	Arg	Lys	Pro	Ala	Lys	Gln	Lys	Val	Pro	Leu	
				545					550					555	
Leu	Ser	Cys	Pro	Ser	Gln	Pro	Phe	Thr	Ser	Lys	Leu	Ala	Leu	Leu	
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Gly	Gln	Val	Phe	Leu	Asp	Ser	Ser								
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<210> 4

<211> 461

<212> PRT

<213> Homo sapiens

<220>

<221> misc_feature

<223> Incyte ID No: 2618358CD1

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				20					25					30	
Gly	Gly	Glu	Arg	Val	Phe	Lys	Asn	Gln	Thr	Gly	Asp	Val	Ala	Cys	
				35					40					45	
Gly	Ser	Tyr	Thr	Leu	Trp	Glu	Glu	Asp	Leu	Lys	Cys	Ile	Lys	Gln	
				50					55					60	
Leu	Gly	Leu	Thr	His	Tyr	Arg	Phe	Ser	Leu	Ser	Trp	Ser	Arg	Leu	
				65					70					75	
Leu	Pro	Asp	Gly	Thr	Thr	Gly	Phe	Ile	Asn	Gln	Lys	Gly	Ile	Asp	
				80					85					90	
Tyr	Tyr	Asn	Lys	Ile	Ile	Asp	Asp	Leu	Leu	Lys	Asn	Gly	Val	Thr	
				95					100					105	
Pro	Ile	Val	Thr	Leu	Tyr	His	Phe	Asp	Leu	Pro	Gln	Thr	Leu	Glu	
				110					115					120	
Asp	Gln	Gly	Gly	Trp	Leu	Ser	Glu	Ala	Ile	Ile	Glu	Ser	Phe	Asp	
				125					130					135	
Lys	Tyr	Ala	Gln	Phe	Cys	Phe	Ser	Thr	Phe	Gly	Asp	Arg	Val	Lys	
				140					145					150	
Gln	Trp	Ile	Thr	Ile	Asn	Glu	Ala	Asn	Val	Leu	Ser	Val	Met	Ser	
				155					160					165	
Tyr	Asp	Leu	Gly	Met	Phe	Pro	Pro	Gly	Ile	Pro	His	Phe	Gly	Thr	
				170					175					180	
Gly	Gly	Tyr	Gln	Ala	Ala	His	Asn	Leu	Ile	Lys	Ala	His	Ala	Arg	
				185					190					195	
Ser	Trp	His	Ser	Tyr	Asp	Ser	Leu	Phe	Arg	Lys	Lys	Gln	Lys	Gly	
				200					205					210	
Met	Val	Ser	Leu	Ser	Leu	Phe	Ala	Val	Trp	Leu	Glu	Pro	Ala	Asp	
				215					220					225	
Pro	Asn	Ser	Val	Ser	Asp	Gln	Glu	Ala	Ala	Lys	Arg	Ala	Ile	Thr	
				230					235					240	

Phe	His	Leu	Asp	Leu	Phe	Ala	Lys	Pro	Ile	Phe	Ile	Asp	Gly	Asp			
				245					250					255			
Tyr	Pro	Glu	Val	Val	Lys	Ser	Gln	Ile	Ala	Ser	Met	Ser	Gln	Lys			
				260					265					270			
Gln	Gly	Tyr	Pro	Ser	Ser	Arg	Leu	Pro	Glu	Phe	Thr	Glu	Glu	Glu			
				275					280					285			
Lys	Lys	Met	Ile	Lys	Gly	Thr	Ala	Asp	Phe	Phe	Ala	Val	Gln	Tyr			
				290					295					300			
Tyr	Thr	Thr	Arg	Leu	Ile	Lys	Tyr	Gln	Glu	Asn	Lys	Lys	Gly	Glu			
				305					310					315			
Leu	Gly	Ile	Leu	Gln	Asp	Ala	Glu	Ile	Glu	Phe	Phe	Pro	Asp	Pro			
				320					325					330			
Ser	Trp	Lys	Asn	Val	Asp	Trp	Ile	Tyr	Val	Val	Pro	Trp	Gly	Val			
				335					340					345			
Cys	Lys	Leu	Leu	Lys	Tyr	Ile	Lys	Asp	Thr	Tyr	Asn	Asn	Pro	Val			
				350					355					360			
Ile	Tyr	Ile	Thr	Glu	Asn	Gly	Phe	Pro	Gln	Ser	Asp	Pro	Ala	Pro			
				365					370					375			
Leu	Asp	Asp	Thr	Gln	Arg	Trp	Glu	Tyr	Phe	Arg	Gln	Thr	Phe	Gln			
				380					385					390			
Glu	Leu	Phe	Lys	Ala	Ile	Gln	Leu	Asp	Lys	Val	Asn	Leu	Gln	Val			
				395					400					405			
Tyr	Cys	Ala	Trp	Ser	Leu	Leu	Asp	Asn	Phe	Glu	Trp	Asn	Gln	Gly			
				410					415					420			
Tyr	Ser	Ser	Arg	Phe	Gly	Leu	Phe	His	Val	Asp	Phe	Glu	Asp	Pro			
				425					430					435			
Ala	Arg	Pro	Arg	Val	Pro	Tyr	Thr	Ser	Ala	Lys	Glu	Tyr	Ala	Lys			
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<212> PRT

<213> Homo sapiens

<220>

<221> misc_feature

<223> Incyte ID No: 2912330CD1

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				20					25					30			
Thr	Glu	Phe	Ser	His	Trp	Met	Asn	Ile	Lys	Thr	Ile	Leu	Asp	Glu			
				35					40					45			
Leu	Val	Gln	Arg	Gly	His	Glu	Val	Thr	Val	Leu	Ala	Ser	Ser	Ala			
				50					55					60			
Ser	Ile	Ser	Phe	Asp	Pro	Asn	Ser	Pro	Ser	Thr	Leu	Lys	Phe	Glu			
				65					70					75			
Val	Tyr	Pro	Val	Ser	Leu	Thr	Lys	Thr	Glu	Phe	Glu	Asp	Ile	Ile			
				80					85					90			
Lys	Gln	Leu	Val	Lys	Arg	Trp	Ala	Glu	Leu	Pro	Lys	Asp	Thr	Phe			
				95					100					105			

Trp	Ser	Tyr	Phe	Ser	Gln	Val	Gln	Glu	Ile	Met	Trp	Thr	Phe	Asn	
				110					115					120	
Asp	Ile	Leu	Arg	Lys	Phe	Cys	Lys	Asp	Ile	Val	Ser	Asn	Lys	Lys	
				125					130					135	
Leu	Met	Lys	Lys	Leu	Gln	Glu	Ser	Arg	Phe	Asp	Val	Val	Leu	Ala	
				140					145					150	
Asp	Ala	Val	Phe	Pro	Phe	Gly	Glu	Leu	Leu	Ala	Glu	Leu	Leu	Lys	
				155					160					165	
Ile	Pro	Phe	Val	Tyr	Ser	Leu	Arg	Phe	Ser	Pro	Gly	Tyr	Ala	Ile	
				170					175					180	
Glu	Lys	His	Ser	Gly	Gly	Leu	Leu	Phe	Pro	Pro	Ser	Tyr	Val	Pro	
				185					190					195	
Val	Val	Met	Ser	Glu	Leu	Ser	Asp	Gln	Met	Thr	Phe	Ile	Glu	Arg	
				200					205					210	
Val	Lys	Asn	Met	Ile	Tyr	Val	Leu	Tyr	Phe	Glu	Phe	Trp	Phe	Gln	
				215					220					225	
Ile	Phe	Asp	Met	Lys	Lys	Trp	Asp	Gln	Phe	Tyr	Ser	Glu	Val	Leu	
				230					235					240	
Gly	Arg	Pro	Thr	Thr	Leu	Ser	Glu	Thr	Met	Ala	Lys	Ala	Asp	Ile	
				245					250					255	
Trp	Leu	Ile	Arg	Asn	Tyr	Trp	Asp	Phe	Gln	Phe	Pro	His	Pro	Leu	
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Leu	Pro	Asn	Val	Glu	Phe	Val	Gly	Gly	Leu	His	Cys	Lys	Pro	Ala	
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Lys	Pro	Leu	Pro	Lys	Glu	Met	Glu	Glu	Phe	Val	Gln	Ser	Ser	Gly	
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Glu	Asn	Gly	Val	Val	Val	Phe	Ser	Leu	Gly	Ser	Met	Val	Ser	Asn	
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Thr	Ser	Glu	Glu	Arg	Ala	Asn	Val	Ile	Ala	Ser	Ala	Leu	Ala	Lys	
				320					325					330	
Ile	Pro	Gln	Lys	Val	Leu	Trp	Arg	Phe	Asp	Gly	Asn	Lys	Pro	Asp	
				335					340					345	
Thr	Leu	Gly	Leu	Asn	Thr	Arg	Leu	Tyr	Lys	Trp	Ile	Pro	Gln	Asn	
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Asp	Leu	Leu	Gly	His	Pro	Lys	Thr	Lys	Ala	Phe	Ile	Thr	His	Gly	
				365					370					375	
Gly	Met	Asn	Gly	Ile	Tyr	Glu	Ala	Ile	Tyr	His	Gly	Val	Pro	Met	
				380					385					390	
Val	Gly	Val	Pro	Ile	Phe	Gly	Asp	Gln	Leu	Asp	Asn	Ile	Ala	His	
				395					400					405	
Met	Lys	Ala	Lys	Gly	Ala	Ala	Val	Glu	Ile	Asn	Phe	Lys	Thr	Met	
				410					415					420	
Thr	Ser	Glu	Asp	Leu	Leu	Arg	Ala	Leu	Arg	Thr	Val	Ile	Thr	Asp	
				425					430					435	
Ser	Ser	Tyr	Lys	Glu	Asn	Ala	Met	Arg	Leu	Ser	Arg	Ile	His	His	
				440					445					450	
Asp	Gln	Pro	Val	Lys	Pro	Leu	Asp	Arg	Ala	Val	Phe	Trp	Ile	Glu	
				455					460					465	
Phe	Val	Met	Arg	His	Lys	Gly	Ala	Lys	His	Leu	Arg	Ser	Ala	Ala	
				470					475					480	
His	Asp	Leu	Thr	Trp	Phe	Gln	His	Tyr	Ser	Ile	Asp	Val	Ile	Gly	
				485					490					495	
Phe	Leu	Leu	Thr	Cys	Val	Ala	Thr	Ala	Ile	Phe	Leu	Phe	Thr	Lys	
				500					505					510	
Cys	Phe	Leu	Phe	Ser	Cys	Gln	Lys	Phe	Asn	Lys	Thr	Arg	Lys	Ile	
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Glu Lys Arg Glu

<210> 6

<211> 1772

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<223> Incyte ID No: 000422CB1

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<210> 7

<211> 1416

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 1398

<223> a or g or c or t, unknown, or other

<220>

<221> misc_feature

<223> Incyte ID No: 983984CB1

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<210> 8

<211> 1889

<212> DNA

<213> Homo sapiens

<220>

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